In the Claims:

1.(currently amended) A recombinant ~~Recombinant~~ cellular system, comprising an animal host cell, comprising the following recombinant proteins:
- a recombinant specific G protein-coupled receptor, and
- a ~~the~~ recombinant CNGA2 Ca2+ permeable channel ~~CNGA2~~.

2. (currently amended) The recombinant ~~Recombinant~~ cellular system according to claim 1, further ~~furthermore~~ comprising a recombinant protein selected from the group of connexins~~, e.g. Cx43 or Cx26~~.

3.(currently amended) The recombinant ~~Recombinant~~ cellular system according to claim 1 ~~or 2~~, wherein the recombinant specific G protein-coupled receptor is selected from ~~the group of~~ type A guanylyl-cyclases and type G ~~the particular~~ guanylyl-cyclases, ~~e.g. type A to G~~.

4.(currently amended) The recombinant ~~Recombinant~~ cellular system according to claim 1 further ~~or 2, furthermore~~ comprising a cyclase that is harmonised with the specific G protein-coupled receptor~~, e.g. an adenylyl- or guanylyl-cyclase~~.

5.(currently amended) The recombinant ~~Recombinant~~ cellular system according to claim 1~~, 2 or 4,~~ wherein the recombinant specific G protein-coupled receptor is selected from: ~~the group of~~ pheromone receptors, ~~e.g. of the V1R-type with all families VR-a to VR-l, including the V3R-type (VR-d), for example V1R-b2, the~~ hormone receptors, ~~e.g. the beta-adrenergic receptors~~ and the olfactory receptors~~, e.g. OR1A1, OR1A2, Olfr43, Olfr49, MOR261-10, MOR267-1, LOC331758, Olfr41 or Olfr6~~.

6.(currently amended) The recombinant ~~Recombinant~~ cellular system according to claim 1 further ~~, 2, 4 or 5, furthermore~~ comprising a recombinant G-protein that is harmonised with the specific G protein-coupled receptor~~, e.g. G-alpha-olf~~.

7.(currently amended) The recombinant ~~Recombinant~~ cellular system according to claim 1 ~~any of the aforementioned claims,~~ wherein the animal host cell is selected from murine cell lines and ~~or~~ human cell lines~~, e.g. human cancer cell lines, such as, for example HeLa or HEK293~~.

8.(currently amended) The recombinant ~~Recombinant~~ cellular system according to claim 1 ~~any of the aforementioned claims~~, wherein the cellular system comprises a potential recombinant specific G protein-coupled receptor.

9.(currently amended) The recombinant ~~Recombinant~~ cellular system according to claim 7, selected from the group of cellular systems comprising: HeLa-Cx43/CNGA2/Olfr49; HeLa-Cx43/CNGA2/G-alpha-olf; HeLa-Cx43/CNGA2/G-alpha-olf/Olfr 49; HeLa-Cx43/CNGA2/G-alpha-olf/Olfr41; HeLa-Cx43/CNGA2/G-alpha-olf/Olfr 6 and ~~or~~ HeLa-Cx43/CNGA2/G-alpha-olf/OR1A1.

10.(currently amended) The recombinant ~~Recombinant~~ cellular system according to claim 1 ~~any of the aforementioned claims~~, wherein the recombinant proteins are present stably ~~and/or transiently transfected~~.

11.(currently amended) The recombinant ~~Recombinant~~ cellular system HeLa-Cx43/CNGA2/G-alpha-olf, as deposited on April 20, 2004 at the DSMZ - Deutsche Sammlung von Mikroorganismen and Zellkulturen GmbH in Mascheroder Weg 1b, D-38124 Braunschweig with the deposit number DSM ACC2649.

12.(currently amended) A method ~~Method~~ for producing a recombinant cellular system, comprising the steps of:

- providing of an animal host cell,
- introducing a recombinant specific G protein-coupled receptor or a potential recombinant specific G protein-coupled receptor, and
- introducing the recombinant CNGA2 Ca2+ permeable channel ~~CNGA2~~.

13.(currently amended) The method ~~Method~~ according to claim 12, further ~~furthermore~~ comprising the step of:

- introducing of a recombinant protein from the group of the connexins~~, e.g. Cx43 or Cx26~~.

14.(currently amended) The method ~~Method~~ according to claim 12 ~~or 13~~, further ~~furthermore~~ comprising the step of:

- introducing ~~of~~ a cyclase that is harmonised with the specific G protein-coupled receptor~~, e.g. an adenylyl- or guanylyl-cyclase~~.

15.(currently amended) The method ~~Method~~ according to claim 12 ~~any of claims 12 to 14~~, further ~~furthermore~~ comprising the step of:

- introducing ~~of~~ a recombinant G-protein that is harmonised with the specific G protein-coupled receptor~~, e.g. G-alpha-olf~~.

16.(currently amended) The method ~~Method~~ according to claim 12 ~~any of claims 12 to 15~~, wherein the introducing method step is selected from:
(Ca2+-phosphate-)transfection, lipofection or electroporation,
optionally followed by the step of ~~well as subsequent optional~~ integration into the genome with the aid of a recombinase or ~~and/or~~ antibiotic-selection cloning, or the step of ~~and~~ transduction.

17.(currently amended) The method ~~Method~~ for identifying receptor activating substances, comprising the method steps of

- providing a recombinant cellular system according to claim 1 ~~any of claims 1 to 7 or 9 to 11~~,

- contacting ~~of~~ the cellular system with a potential G protein-coupled receptor activating substance, and

- measuring ~~of~~ the activation or inhibition of the Ca2+ influx into the cellular system ~~cell~~.

18.(currently amended) The method ~~Method~~ according to claim 17, wherein the potential G protein-coupled receptor inducing substance is selected from odorants, ~~such as, for example, (-)citronellal or beta-citronellol~~, pheromones, and hormones, ~~such as, for example, adrenalin or natriuretic peptide type C~~.

19.(currently amended) The method ~~Method~~ according to claim 17 ~~or 18~~, wherein the measuring of the Ca2+ influx into the cell includes: ~~a~~ loading of the cell with Fura-2-AM or Fluo-4-AM, and measuring ~~of~~ the emission-wavelength at 515 nm.

20.(currently amended) The method ~~Method~~ according to claim 17 ~~any of claims 17 to 19~~, wherein the cellular system is pre-treated with an enhancer~~, such as, for example forskolin or thapsigargin~~.

21.(currently amended) A method ~~Method~~ for producing a pharmaceutical composition, comprising the steps of:

- performing a method according to claim 17 ~~any of claims 17 to 20~~, and
- formulating ~~of~~ the obtained G protein-coupled receptor inducing substance with ~~known~~ auxiliary agents and additives.

22.(currently amended) A method ~~Method~~ for identifying of G protein-coupled receptors, comprising the steps of:

- providing a recombinant cellular system according to claim 8,

- contacting ~~of~~ the cellular system with a receptor-activating substance or presumably receptor-activating substance, and

- measuring ~~of~~ the activation or inhibition of the Ca2+ influx into the cell.

23.(currently amended) The method ~~Method~~ according to claim 17 ~~any of claims 17 to 22~~, wherein the method is performed in a high-throughput-environment~~, e.g. in microtiter-plates in a fluorescence-plate reader or high-resolution microscopy-supported on the level of individual cells~~.

24.(cancelled)

25.(cancelled)